Quantum
MEDICAL IMAGING, LLC

Model RS-580 Series

"CMT" Ceiling Mounted Tube Support

Planning Guide

Manual Part No. DC30-012 Revision A

This manual is copyrighted and all rights are reserved. No portion of this document may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form without prior consent in writing from Quantum Medical Imaging, LLC.

Copyright© 2000 By QMI

Quantum Medical Imaging, LLC
2905 Veterans Memorial Highway
Ronkonkoma, New York 11779 USA
Phone: (631) 567-5800
Fax: (631) 567-5074

REVISION HISTORY

REVISION	DATE	TYPE OF MODIFICATION
A	12/15/00	Initial Release.

The following pages contain planning considerations for installation of Quantum Medical Imaging LLC's "CMT" Ceiling mounted Tube Support (Model RS-580).

General Remarks ⧫

- With distribution of this revision level, all preceding planning guides, Speed Infos (PG's) and drafts lose their validity.

- All layouts issued by the Planning Departments must bear a note referring to the installation and delivery conditions of the Siemens Medical Engineering Group. The installation and delivery conditions must be submitted with the layouts.

- Unless otherwise specified, all dimensions are indicated in "mm".

⧫ - This symbol indicates a change (see revision status).

⊕ - Orientation points
Points specific to system components which are referenced when positioning system components to each other or in the room.
The isocenter of a radiographic system is always designated as the orientation point.

- Fixpoints
Clearly marked points on system components, installation ceiling, walls or floor at which cable outlets are located.
Illustration in the drawings: circle with letter/number combination.
The cable lengths establish the maximum fixpoint distances and thus the maximum distances between the individual system components.

- Room height
The room height is the distance measured from the top surface of the floor to the bottom surface of the ceiling structural elements (Unistrut rails) (bottom surface of drop ceiling).

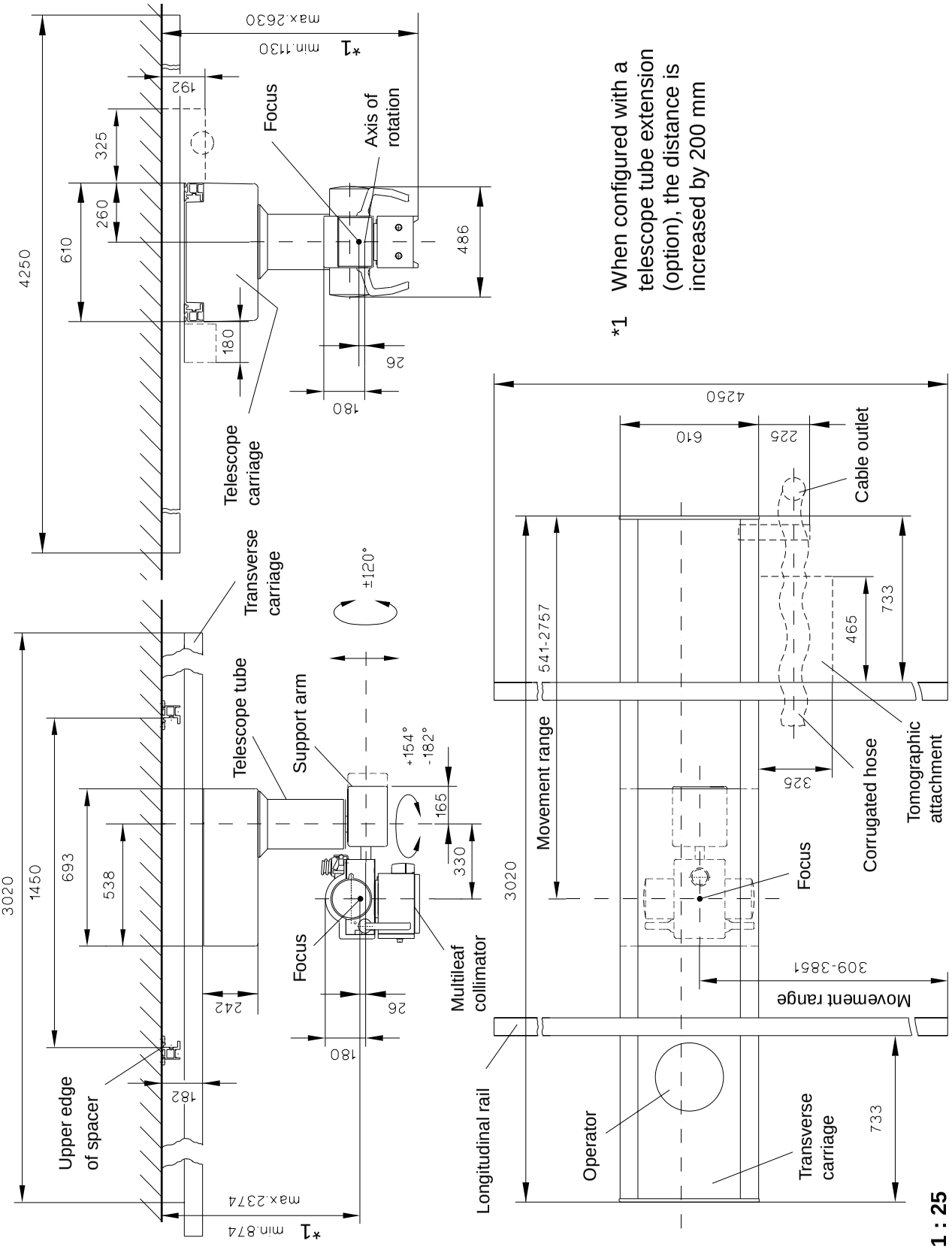
- Room lighting
According to DIN 68 68-57 (international standard being prepared), the lighting in rooms in which diagnosis is made on image playback devices (monitors) must meet the following requrements:

  adjustable, no anti-glare screen, reproducible adjustment of lighting (e. g. dimmer with scale),

  no glare or reflection from windows, lights and light boxes in the standard working position of the monitors.

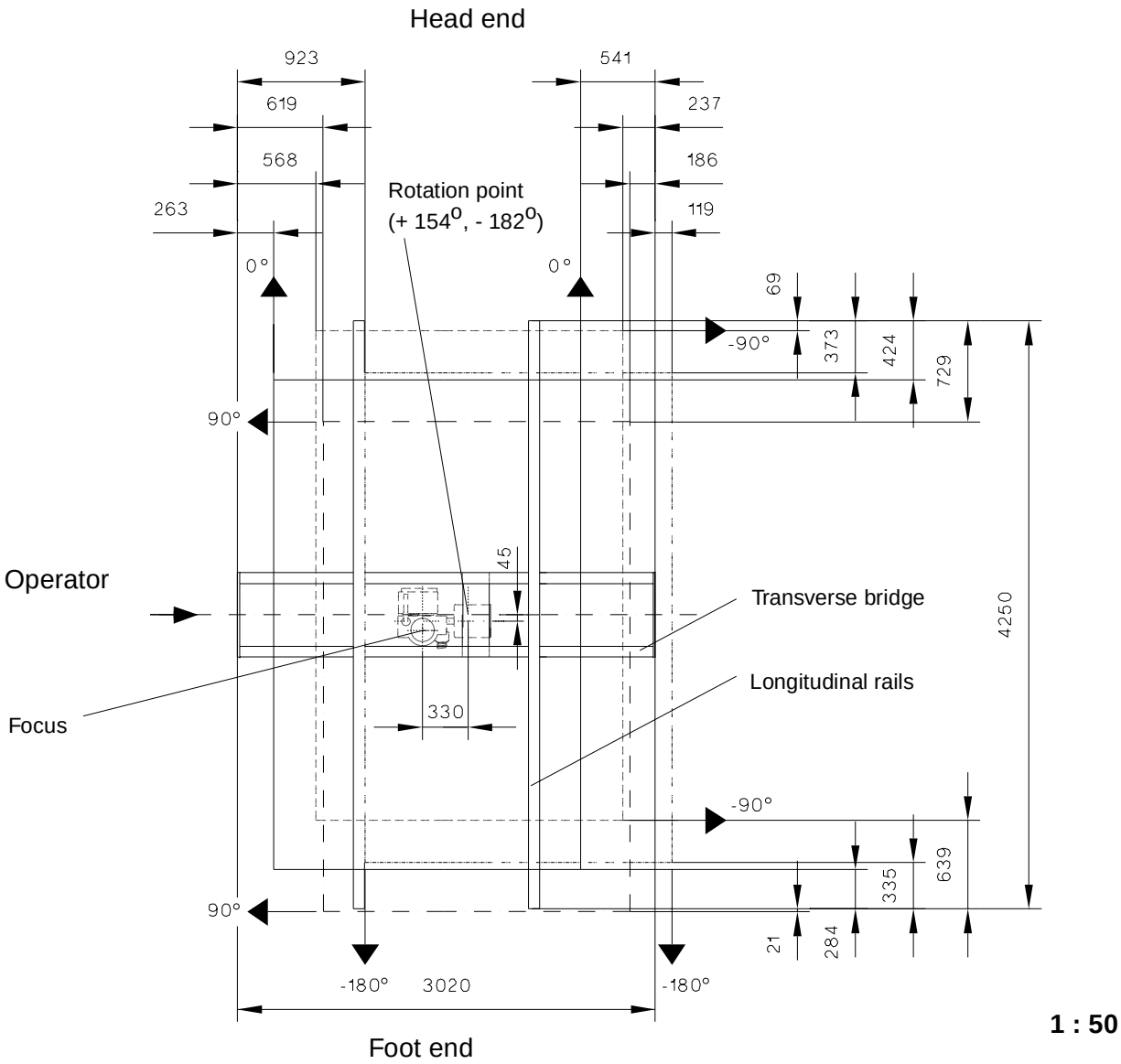
Dimensions of Quantum Medical Imaging CMT RS-580

with 3 m transverse bridge



Useful range of Quantum Medical Imaging CMT RS-580

with the 3 m transverse carriage (beam directed towards the Bucky wall stand)



Direction of tube assembly for Bucky wall stand

Support arm 0°

Support arm rotated -90°

Support arm rotated 90°

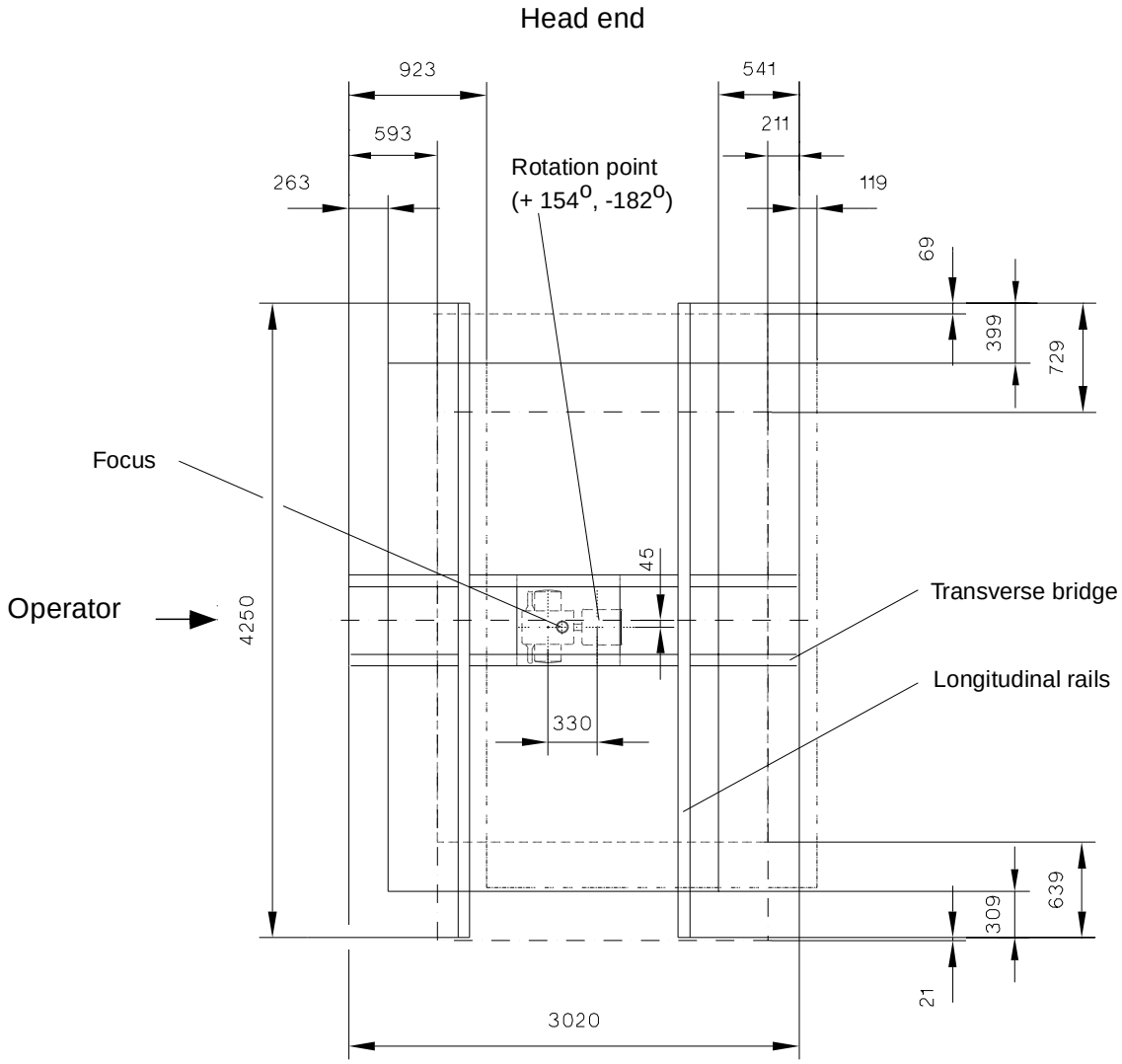
Support arm rotated -180°

NOTICE

The tube assembly was rotated in 90° steps in the clockwise direction. Rotation of the tube assembly by 90° in the counterclockwise direction is also possible.

Useful range of Quantum Medical Imaging CMT RS-580

with 3 m transverse carriage



1 : 50

Support arm 0°

Support arm rotated - 90°

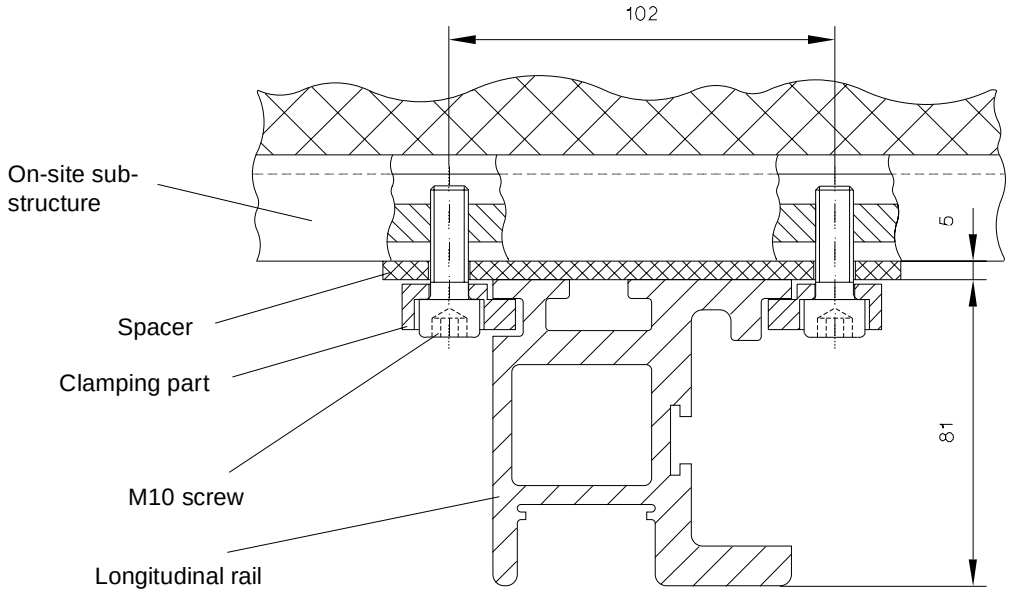
Support arm rotated 90°

Support arm rotated - 180°

NOTICE **The tube assembly was rotated in 90° steps in the clockwise direction. Rotation of the tube assembly by 90° in the counterclockwise direction is also possible.**

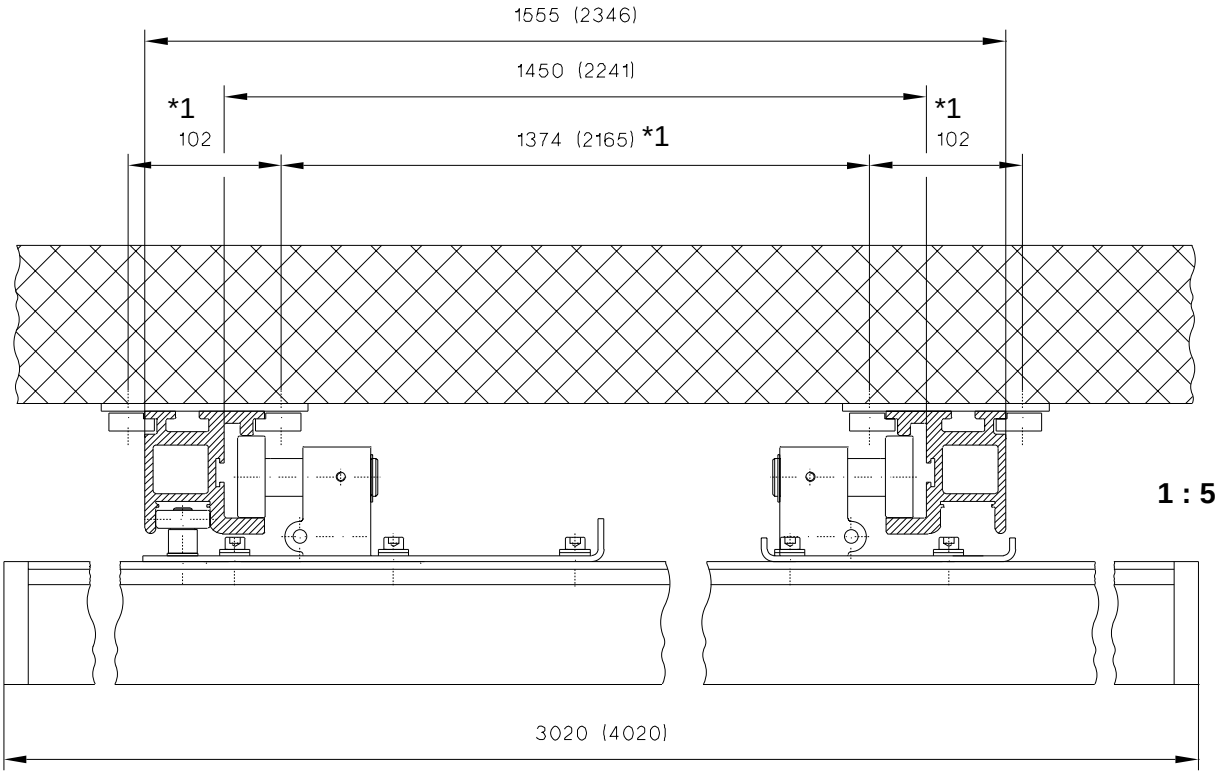
Ceiling installation for Quantum Medical Imaging CMT RS-580

Detailed view of the longitudinal rail



1 : 2

Hole spacing



1 : 5

The spacing for the 4 m transverse bridge is added in parentheses

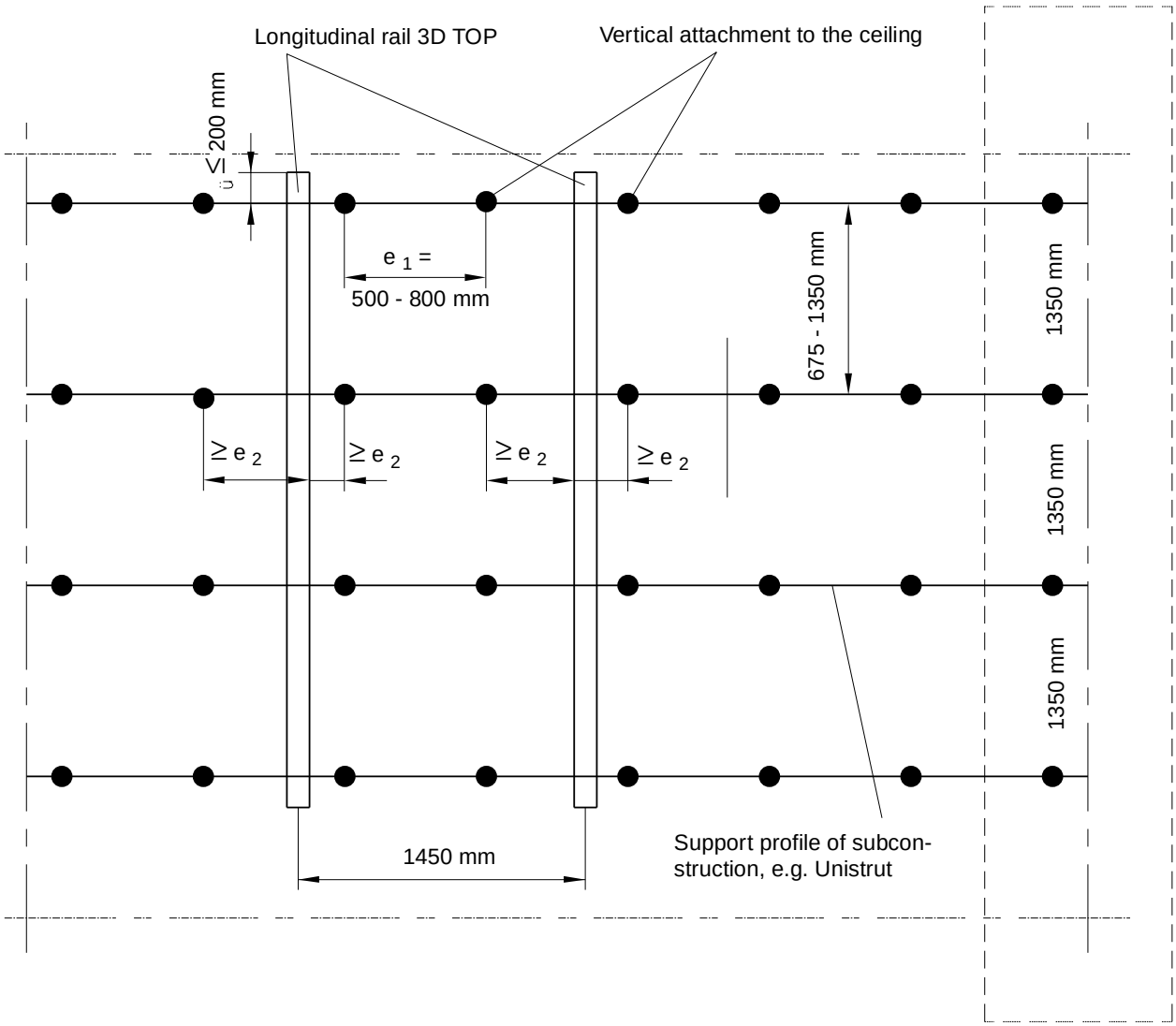
*1 Hole spacing

Requirements for installation of the CMT RS-580 ceiling stand without structural calculation of the ceiling subconstruction

When there is 500 - 800 mm spacing of the mounting points for the subconstruction (e.g. Unistrut rails), each rail must be able to support a load of at least 7.0 kN.

Each Unistrut mounting point must be able to support a load of at least 5.0 kN.

The longitudinal rails must be positioned as shown in the following sketch.



The longitudinal rails may not be mounted directly below the Unistrut mounting points.
Example with 4 mounting points per rail, with a stop spacing of 1350 mm and a rail spacing of 100 mm.

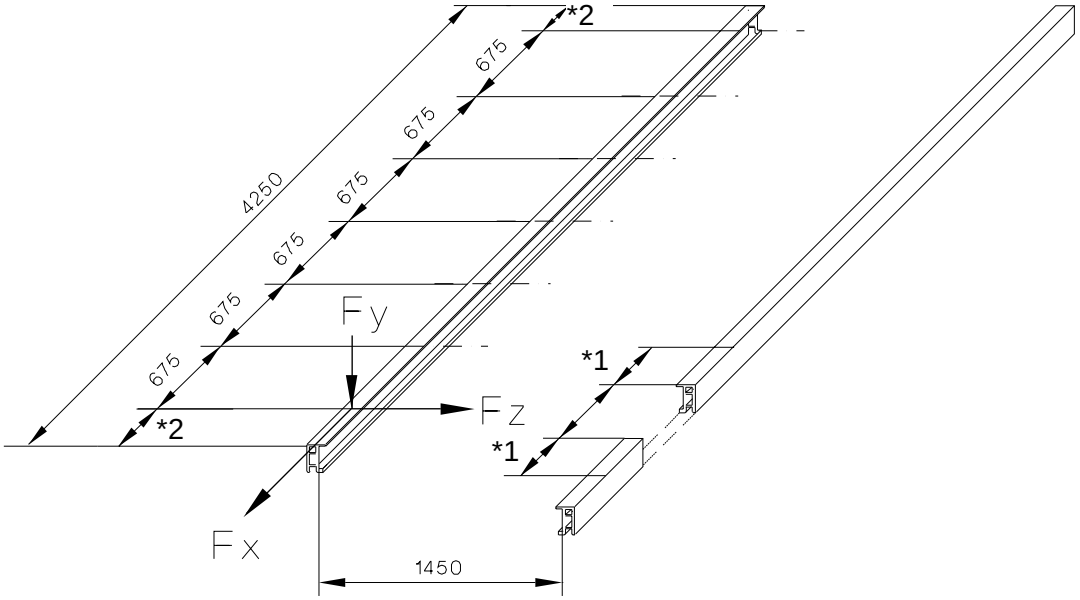
e_1	[**mm**]	800	700	600	500
e_2	[**mm**]	220	190	160	140

The load distribution through the rest of the building is not taken into consideration here.

e_2 = distance from longitudinal rail to next mounting point for Unistrut rail

ü = Rail overhang

Ceiling installation for Quantum Medical Imaging CMT RS-580



Holding loads per mounting point (kN)

With rail overhang (*2)	max. 200 mm
Fy	7.0
Fz	2.7
Fx	2.1

CAUTION

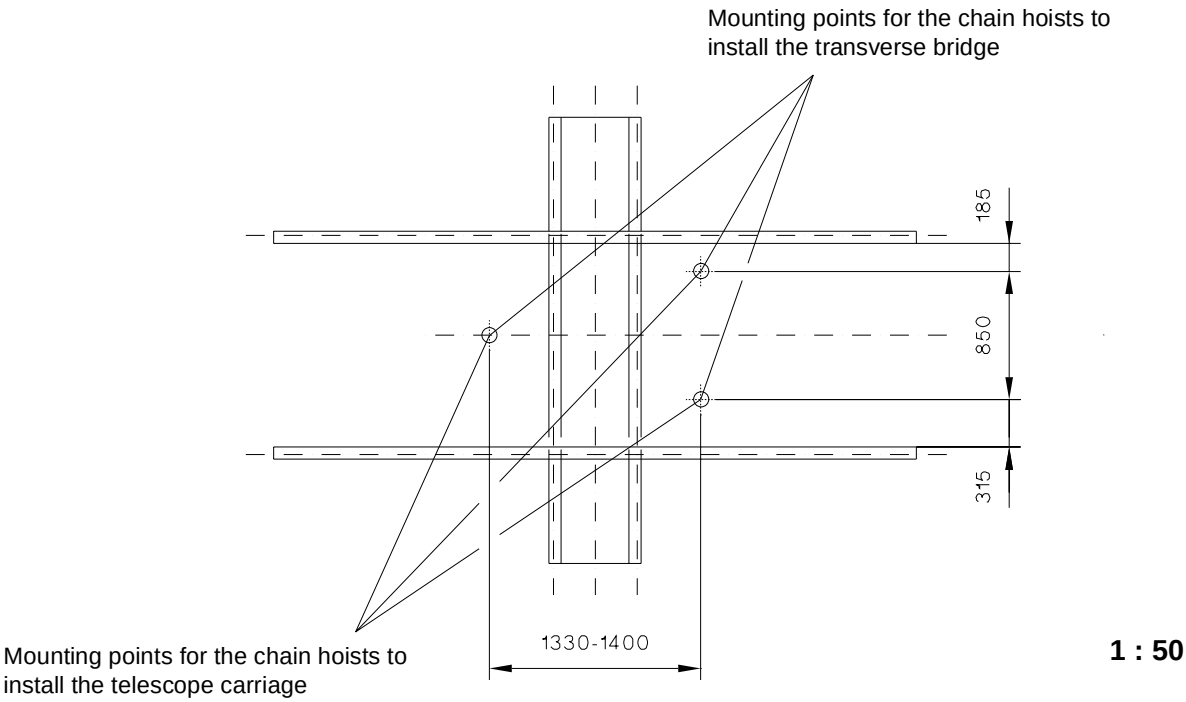
The fastener materials for 7 mounting points per rail are included in the shipment. Hole spacings (grid) between 675 and 1350 mm are possible, with a rail overhang (*2) of 80 to 400 mm. At least 4 mounting points are required for each standard longitudinal rail.

NOTICE

The indicated forces include:
the static load forces as well as
the dynamic load forces for a movement speed of up to 0.6 m/s in the Fy direction.

*1 With rail overhang, observe 150 mm minimum overhang for the rail extension adapter. The extension must not project into main working area.

Ceiling mounting points for Quantum Medical Imaging CMT RS-580


Mounting points for the chain hoists to install the transverse bridge
185
850
315
1330-1400
Mounting points for the chain hoists to install the telescope carriage

1 : 50

NOTICE	**An appropriate substructure (preferably Unistrut rails) must be installed. The chain hoists and eye bolts must be used for the particular subconstruction.**

Electrical data

Ceiling stand QMI CMT RS-580	Power supply
	from particular system

Weights and heat dissipation

	Weight [kg]	Heat dissipation [W]
Central electronics	—	approx. 300
Ceiling stand 3D TOP **with 3 m transverse bridge**	approx. 347 ⧫ approx. 361 ⧫	max. 100
2 longitudinal rails (4.25 m)	each approx. 26.5	—
Transverse track (3 m)	approx. 56	—
Telescope carriage complete	approx. 238	—

Environmental conditions

	Operation	Transport	Storage
permissible ambient temperature	10° ... 40° C	- 20° ... 70° C	- 20° ... 70° C
permissible relative air humidity	20 % ... 75 %	10 % ... 95 % ⧫	10 % ... 95 % ⧫
permissible air pressure	700 hPa ... 1060 hPa	500 hPa ... 1060 hPa	500 hPa ... 1060 hPa

Packaging and transport routes

largest crate	L 1484 x W 1024 x H 1526 mm
heaviest single part	approx. 410 kg
minimum door width and corridor width for transport	min. 820 mm door width approx. 940 mm corridor width

Surface colors

Primary color	white textured enamel, Med. surface No. 4146 similar RAL gray - white 9002
Combination color	medical blue, Med. surface No. 4511

Notes on cable run

Suggested cable run

Cable duct depth 60 mm

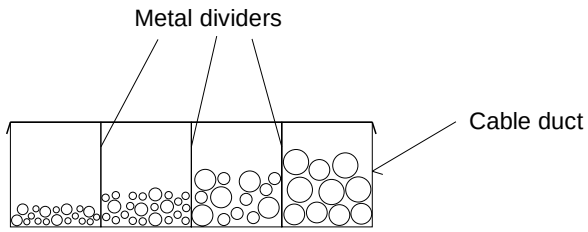
if required, deeper at cable crossovers.

Run high voltage and power cables separately from control and video cables
(use shielding if possible).

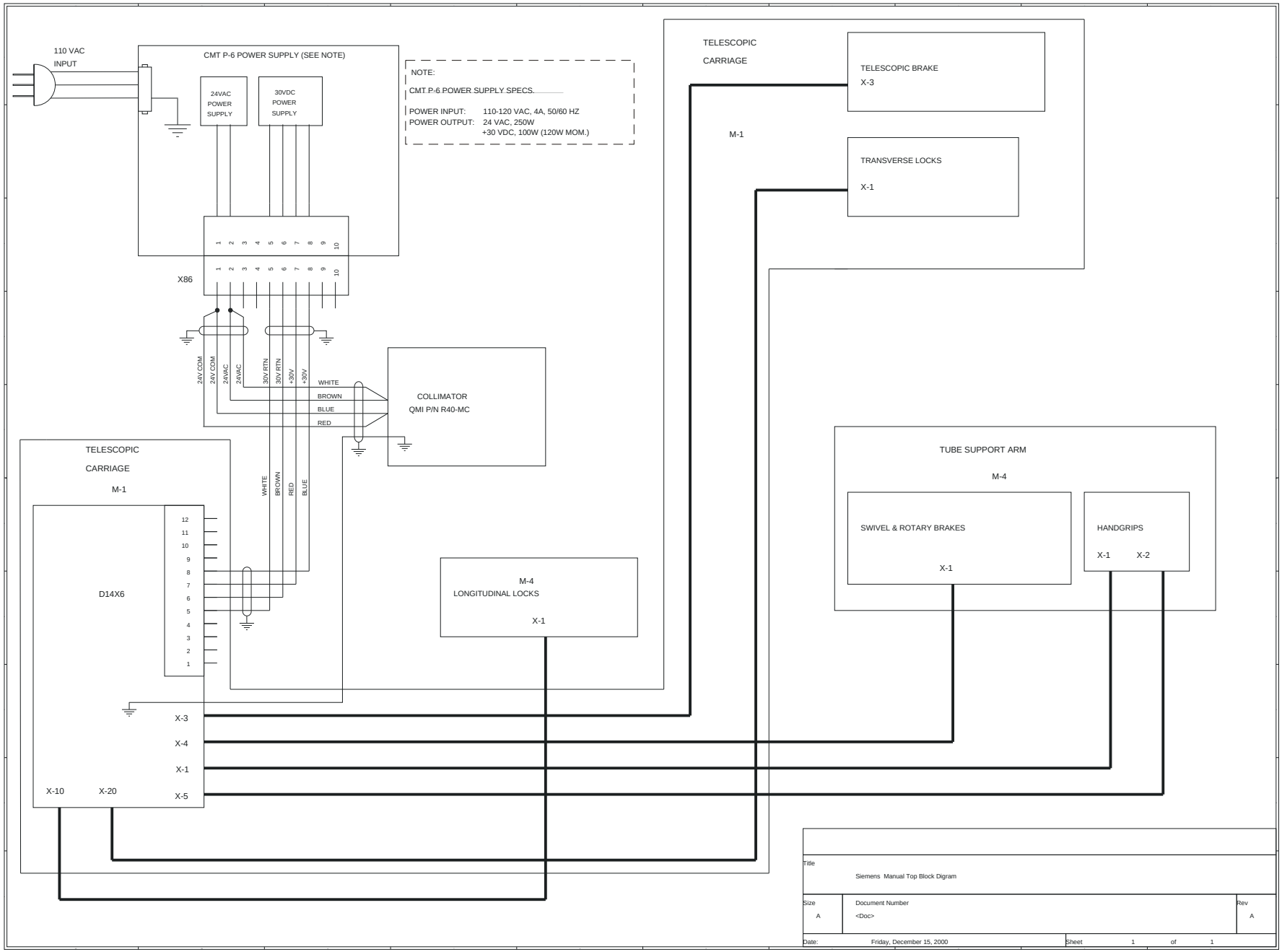
Make asbolutely sure to:

Avoid cable looping and, as far as possible, crossovers.

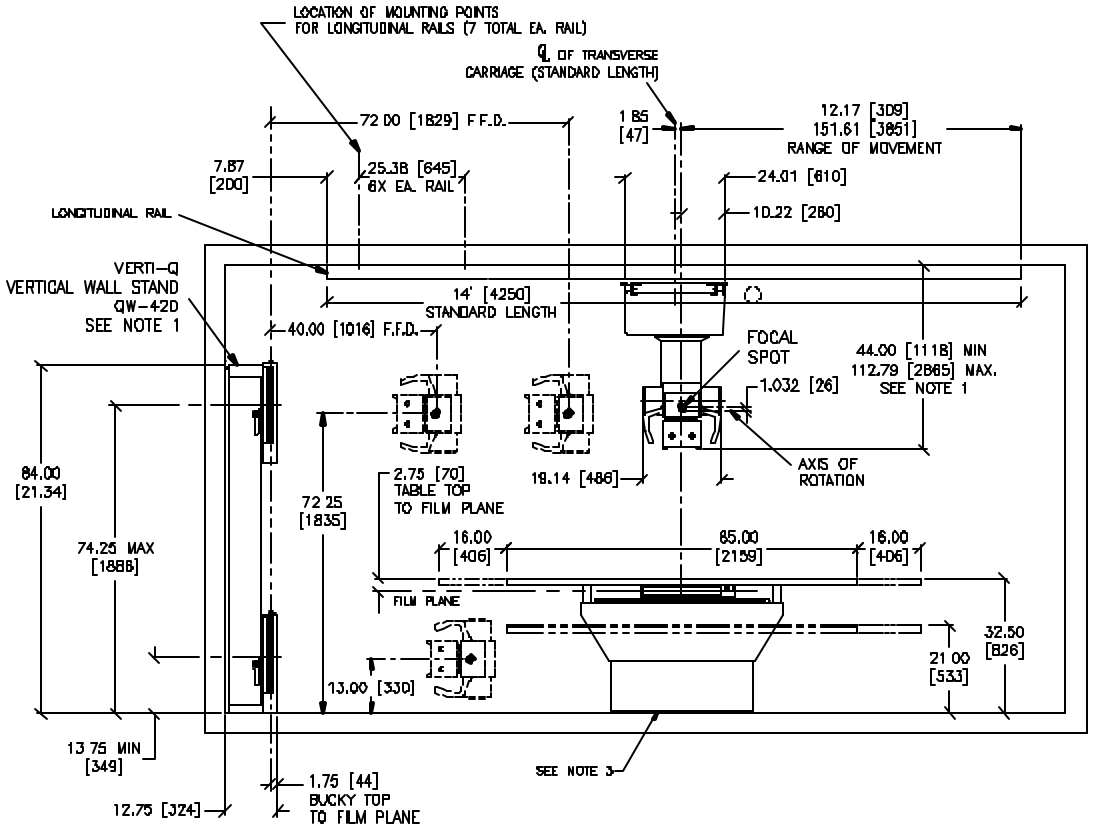
- Run cables in separate conduits or closed cable ducts.
- If open cable ducts are used, run the cables separately using metal dividers or similar devices.

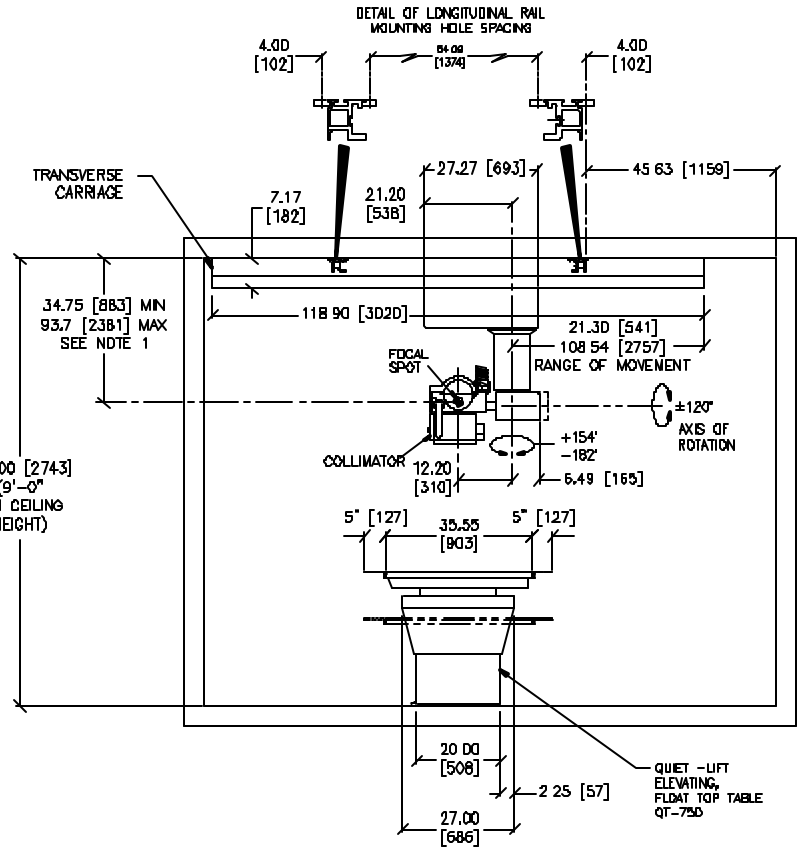


WIRING DIAGRAM FOR QUANTUM RS-580 (CMT) TUBECRANE
(MODIFIED SIEMENS 3D TOP CEILING STAND)



REVISIONS				
REV	ECN	DESCRIPTION	DATE	DRN BY.
B		MODIFIED DIMENSIONS	1-5-01	DW





PROPRIETARY

THIS DOCUMENT EMBODIES PROPRIETARY RIGHTS OF QMI LLC. IT IS FURNISHED FOR REFERENCE ONLY. ALL OTHER USE IS PROHIBITED.

NOTES:

1. VERTI-Q MOUNTING POINTS MUST WITHSTAND APPROX. 100 LBS [45.36 kg] PULL.
2. CEILING MUST BE CAPABLE OF SUPPORTING A 1000 LB [453.6 kg] DYNAMIC LOAD.
3. QUIET-LIFT MOUNTING POINTS MUST WITHSTAND APPROX 500 LBS [226.8 kg] PULL.
4. DIMENSIONS WITHIN [ ] ARE IN MILLIMETERS.
5. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

DRAWN BY: DON WHITE	DATE: 1-5-01
CHECKED BY	
ENG APPROVAL	
QA APPROVAL	
MFG APPROVAL	

Quantum Medical Imaging, LLC

TITLE

Q-RAD CS-1 SYSTEM

MODEL NOS.	DWG/PART NO	REV
QS-580; QT-750; QW-420	DC80-006	B

SCALE	DWG CAT	SHEET
NOT TO SCALE	DOCUMENTATION	1 OF 1